

CLAIMS

1. Overload safety coupling, especially for the main drivetrains on rolling stands, which bridges a toothed spindle section 1 and a spindle section 6 with a permanent seat, characterized by a rotating-and-sliding sleeve 3, which has internal toothing at one end to hold the spindle section 1 in a way that allows axial displacement, whereas, at the other end, it holds an inner sleeve 4, which is permanently seated on the spindle section 6, where a pressure sleeve 5 and a pressure gap 14 pretensioned with pressure fluid produce a nonrotatable connection between the rear sleeve-like extension 13 and the inner sleeve, which frictional connection gives way in the event of an overload.

2. Safety coupling according to Claim 1, characterized in that, to absorb the axial coupling forces, external axial pressure cylinders 7, 7' are preferably provided as spacers between the spindle sections 1 and 6.

3. Safety coupling according to Claim 1 or Claim 2, characterized in that the spindle section 1 is designed with a fixed bearing 2, whereas the spindle section 6 is designed with a movable bearing 8.

4. Safety coupling according to Claim 1, Claim 2, or Claim 3, characterized in that, in the event of an axial overload on the spindle section 6 acting in the he direction toward the side where the fixed bearing 2 is installed, this spindle section 6, along with the movable bearing 8, the antirotation device (4, 5, 10, 11, 12), and the internally toothed rotating-and-sliding sleeve 3, is able to slide over the externally toothed part of the spindle section 1.

5. Safety coupling according to one or more of Claims 1 to 4, characterized in that the initiating force of the axial displacement can be set by adjusting the pressure in the cylinders 7, 7'.

6. Safety coupling according to one or more of Claims 1 to 5, characterized in that the cylinders 7, 7' are designed to control or damp the coupling action.

7. Safety coupling according to one or more of Claims 1 to 6, characterized in that, in the event of a torque overload, the spindle section 6 with the permanently connected sleeve 4 is designed to slip relative to the rotating-and-sliding sleeve 3 and the pressure sleeve 5, and in that a shear collar 10, which is permanently connected to the section 6, is also connected to

a shear valve 11, so that the connection pretensioned by the pressure medium in the pressure gap 14 is released.

8. Safety coupling according to one or more of Claims 1 to 7, characterized in that the pressure sleeve (5) is rotatably supported on the inner sleeve (4) by a bearing (12).

9. Safety coupling according to one or more of Claims 1 to 8, characterized in that a predetermined initiating torque can be set by adjusting the pressure at the pressure sleeve (5).